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Stable Ischemic Heart Disease

CLOPIDOGREL RESISTANCE AND INTRA-STENT THROMBI ASSESSED BY OPTICAL COHERENCE TOMOGRAPHY AFTER DRUG-ELUTING STENT IMPLANTATION

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Interventional Imaging Modalities and Treatments for Atherosclerotic Heart Disease
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Background: A recent large scale prospective registry demonstrated that high platelet reactivity on clopidogrel rather than that on aspirin was related to stent thrombosis and myocardial infarction after drug-eluting stent (DES) implantation. The purpose of this study was to evaluate the relationship between clopidogrel resistance and intra-stent thrombi following DES implantation using optical coherence tomography (OCT).

Methods: A total of 72 lesions treated with DES from 42 patients were studied. At follow-up (median 417 days) after DES implantation, clopidogrel resistance was assessed by P2Y12 reaction unit (PRU) using the VerifyNow assay system. By OCT, intra-stent thrombi were defined as signal-rich, low-backscattering protrusions (= white thrombi), or high-backscattering protrusions inside the arterial lumen with signal-free shadowing (= red thrombi). Clopidogrel resistance was defined as ≥230 PRU. Incidence of intra-stent thrombi was compared between patients with and without clopidogrel resistance.

Results: Clopidogrel resistance was present in 22 patients (52%). Incidence of intra-stent thrombi was significantly higher in patients with clopidogrel resistance than those without clopidogrel resistance (19% vs. 3%, P<0.001).

Conclusions: Incidence of intra-stent thrombi was related to the clopidogrel resistance. This may explain higher incidence of stent thrombosis in patients with clopidogrel resistance.